CASE STUDY #7

HMO BACKGROUND

- This HMO's 1997 annual disease prevalence review revealed that diabetes was 16th on the list of primary diagnoses for in-patient stays. Insulin was included in the HMO's "Top 25 Therapeutic Drug Classes."
- Prevalence of diabetes within the HMO was noted to be 2.09%. This was believed to be artificially low since many people with diabetes do not receive regular care and wouldn't be identified through medical claims. Data obtained from the Wisconsin Diabetes Control Program indicated that the prevalence of diabetes ranged between 5.4% and 8.6% in the counties within the HMO's service area. The HMO also noted the significant estimated statistics for undiagnosed diabetes.
- The HMO noted recent scientific studies, revealing that significant benefits could be achieved through good diabetes control.
- The HMO adopted the ***Essential Diabetes Mellitus Care*** **Guidelines** (*Guideline*s) and distributed them to all of their PCPs and eye care providers.
- The HMO's **initial efforts** to improve diabetes care concentrated on annual eye exams in 1998. Early interventions were aimed at educating providers and members with diabetes of the recommendations for eye exams. A **survey** was sent to all members with diabetes to **identify barriers** to obtaining eye exams **[tool #1].** The survey asked each member: 1) whether they had diabetes, 2) whether their PCP had informed them about diabetic eye disease and the need for an annual eye exam, and 3) whether they had received an eye exam. Results of this survey revealed that:
  - **83%** of members with diabetes **who received education** about eye exams from their PCP received an eye exam versus **35%** for those who **did not** receive this education from their PCP.
- PCPs received a list of their panel of members with diabetes who were due for an eye exam. Eye care providers received diabetes eye exam recommendations from the ***Guidelines*** and a sample form developed by the HMO for **reporting eye exam results** to the PCP. Members with diabetes received educational reminders about the need for and value of annual eye exams.
- The HMO made a decision to **eliminate** the **requirement for a referral** to receive an annual eye exam.

METHODOLOGY

The HMO used HEDIS® 1999 methodology to assess its baseline data for diabetes eye exams.

BASELINE DATA FOR DIABETES EYE EXAMS

- Measurement revealed a rate of 57.7% for the diabetes eye exam measure.

BASELINE BARRIER ANALYSIS

The HMO established a Diabetes Care Committee (DCC) in 1999 to help the Clinical Quality Improvement Committee (CQIC) identify barriers for improvement. The DCC included an endocrinologist, internal medicine and family practice physicians, the HMO healthcare quality nurse, the health services manager (an RN), several quality improvement staff, and a clinic manager. The CQIC included the HMO medical director, a family practice physician, a cardiologist, quality improvement nurses, and health service staff (medical assistant, LPN, pharmacist, behavior management) from their network. Barriers identified through focus groups and frequent meetings with the DCC and the CQIC included:

- Primary care providers (PCP) lacked knowledge about recommendations for diabetes care.
- The HMO lacked an information system that could identify each PCPs panel of members with diabetes.
- PCPs lacked tracking mechanisms to identify members who needed specific exams.

- Communication between providers and eye care specialists was inadequate.
- The PCPs and eye care providers worked with multiple health plans, making acceptance of independent initiatives difficult.
- The HMO lacked tools to facilitate the reporting of results of eye exams to the PCP.
- Communication between providers and members with diabetes was poor.
- Many HMO members lacked a designated PCP.
- Members lacked knowledge of benefit coverage.
- Members lacked knowledge of the importance of diabetes exams.

BASELINE INITIAL INTERVENTIONS

The DCC and CQIC believed that their previous interventions aimed at members with diabetes and their providers had improved rates for eye exams. Also, since recent scientific studies had revealed that significant benefits could be achieved with tight glycemic control, the DCC and CQIC decided to expand their focus to include all diabetes preventive screenings. The following interventions were implemented as part of this plan:

- The HMO developed a **Diabetes Health Management Program** (DHMP), based on the ***Guidelines***, in order to take advantage of the latest scientific research, to promote improved health of members with diabetes, and to increase the early diagnosis of diabetes. All PCPs and members with diabetes were informed about the DHMP and invited to participate.
- The HMO sent the ***Guidelines*** to all provider sites and provided an educational seminar. A patient-version of the ***Guidelines*** was sent to each plan member identified as having diabetes.
- Additional **professional education** materials were periodically distributed in the **Provider Manual** (e.g., "Diagnosis and Management of Dyslipidemia Guidelines", etc.) and provider newsletters.
- The HMO developed a **diabetes registry** using pharmacy data and medical claims.
- PCPs received **lists of their panel of members** with diabetes and were asked to confirm the diagnosis for each one.
- The HMO **clarified codes** for billing eye exams for their eye care providers and continued to send them forms for reporting eye exam results back to the PCPs.
- The HMO also provided the **eye exam reporting forms** to members and asked them to take them to their eye care provider and remind them to send exam result information to the PCP.
- The HMO sent **results of the diabetic eye exam survey** to PCPs and clinic managers.
- The HMO sent **annual reminders** for eye exams, information about the value of the exams, and **clarification** that the eye exam is a covered benefit to members with diabetes.
- The HMO included articles about the value of eye exams in the **member newsletters**.
- The HMO worked with its network partners and sent a direct mailing to encourage members to select a PCP (e.g. to help establish a relationship, enhance communication, and improve accountability).

METHODOLOGY FOR NEW BASELINE MEASUREMENT FOR ADDITIONAL DIABETES MEASURES

The HMO used **HEDIS â 2000 methodology** to assess three Comprehensive Diabetes Care Measures (diabetes eye exam performed, LDL-C control [<130 mg/dl], and nephropathy monitoring). One HMO-specific (**non-HEDIS**®) measure (good to fair control A1c, defined as **= 8%**) was also evaluated. This assessment provided the baseline for future measurements and subsequent interventions.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE AND HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C control <130 mg/dl	Nephropathy monitoring	Good to fair A1c control = 8%*
Baseline, HEDIS® 2000 (CY 1999 data)	64.0%	48.9%	38.7%	48.4%*

* HMO-specific (**non HEDIS**®) measure

NEW BASELINE MEASUREMENT BARRIER ANALYSIS – ADDITIONAL MEASURES

The DCC and CQIC devoted considerable time to conduct a valuable assessment of its previous interventions. This evaluation indicated:

- More timely data were needed to evaluate the effectiveness of interventions.
- Physicians needed more feedback on diabetes care for their patients.
- Providers had a poor understanding of the screening and testing recommendations for kidney function monitoring.
- Providers had inadequate knowledge about new diabetes medications and treatment regimens.
- Providers lacked support and outreach options for high-risk members with diabetes.
- The availability of multiple glucose-testing meters caused confusion with training.
- Providers and members were unclear about glucose-testing meters (e.g., where & how to obtain, coverage by the plan, selection process, etc.)
- Benefit coverage for diabetes education was inadequate (e.g., group classes were not covered).
- Members lacked knowledge of coverage for diabetes exams.
- Members lacked knowledge about recommendations for diabetes exams.

INTERVENTIONS SUBSEQUENT TO NEW BASELINE – ADDITIONAL MEASURES

The HMO continued its previous interventions and expanded to new activities.

- The HMO continued to send the ***Guidelines*** (and revisions) to providers on an annual basis.
- The HMO continued to **expand the diabetes registry**. The registry included demographics, PCP information, information on key services (through claims), and information about participation in the DHMP. Most interventions provided to the member were stored in the registry. Extracts from the claims and encounter systems populated the registry electronically. Specific data for HDL, LDL-C, A1c, triglycerides and blood pressure were included in the registry **only for the HEDIS sample** of diabetes patients (after the record review extraction).
- The HMO **collaborated with several local area health plans** to develop a medication guide to **clarify the current medications** for type 2 diabetes and lipid management **[tool # 2]**. The tool also clarified medications that were covered and not covered by each health system's formulary. The tool was mailed to all providers and is updated and re-distributed annually.
- The HMO **standardized its vendor for home glucose meters** and provided information and education to PCPs. A **free glucose meter program** was started and about 300 members participated.
- **Annual reminder letters** were sent to members about the value and recommendation for eye exams and clarification that the exams were covered benefits.
- Wallet card versions of the ***Guidelines*** and lists of national diabetes resources were sent to all members with diabetes.
- **PCPs received information about the DHMP and were encouraged to enroll members.**
- Members with diabetes were also notified of the DHMP and encouraged to enroll.
- The HMO **identified newly diagnosed members** through medical and pharmacy claims and informed the DHMP. This allowed the DHMP to **begin management and tracking efforts early**. Newly diagnosed members were sent a **"Welcome to the Program" packet** that included: a welcome letter **[tool # 3]**, a brochure and member versions of the ***Guidelines***, DHMP contact information, provider information, an offer for a free glucose testing meter, a listing of resources, and a diabetes-specific newsletter.
- The **HMO underwriting staff forwarded names of new plan members identified with diabetes to the DHMP**. The new members also received the "Welcome to the Program" packet.

RE-MEASUREMENT #1 using HEDIS® **2001** methodology to assess the three selected Comprehensive Diabetes Care Measures revealed improvements in LDL-C control and nephropathy monitoring, while the

rate for diabetes eye exams decreased slightly. The rate for the HMO-specific "good to fair A1c control (= 8%)" (**non-HEDIS®)** measure improved.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE AND HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C control <130 mg/dl	Nephropathy monitoring	Good to fair A1c control = 8%*
Baseline, HEDIS® 2000 (CY 1999 data)	64.0%	48.9%	38.7%	48.4%*
HEDIS® 2001 (CY 2000 data)	62.1%	54.7%	50.1%	50.1%*

* HMO-specific (**non-HEDIS** â) measure

INTERVENTIONS SUBSEQUENT TO RE-MEASUREMENT #1

During 2001, the HMO continued to implement and improve its previous system, provider, and member specific interventions.

- The HMO sent the revised ***Guidelines***, a list of diabetes educators, and information about covered supplies to all PCPs, NPs, PAs, endocrinologists, clinic managers, and diabetes educators.
- **Diabetes Patient Reports** were developed from the registry with input from providers on the CQIC, diabetologists, and other collaborators.
  - The Diabetes Patient Reports included patient-specific data on care, medication and diabetic supplies provided over the previous 12 months as identified by claims. Services were compared with the ***Guidelines*** recommendations and goals **[tool #4]**. Reports also included an explanation of appropriate monitoring for diabetic nephropathy.
  - **Specific aspects of care** included in the report were: prescriptions; screening for microalbuminuria, creatinine clearance, A1c, and LDL-C; eye exams; influenza vaccinations; office and emergency department visits for diabetes; and hospitalizations for diabetes.
  - **Patient telephone numbers were added** to the Diabetes Patient Reports to facilitate follow-up. Date of birth, age and gender were also added.
  - The HMO sent a cover letter with the Diabetes Patient Reports that **instructed PCPs to contact members needing services. Reminder letters sent to members encouraged them to work with their provider to receive recommended care** . Efforts were continued to **foster communication** between the members and their PCP.
- The HMO **worked with providers to obtain feedback** on the Diabetes Patient Reports to tailor them to be useful to their needs. As a result, **additional modifications** were made to the reports. These reports are now sent to PCPs twice each year.
- Aggregate data reports compared the PCP rates of care to their clinic aggregate rates and also to the entire HMO population.
- The Diabetes Health Management Program staff **contacted high-risk members** with diabetes who had been **hospitalized or had elevated A1c levels** .
- The HMO sent samples of diabetes patient wallet cards, brochures, and ordering instructions for the materials to all PCPs. They also sent information about the **WI Collaborative Diabetes Eye Care Initiative** (including the Initiative's sample reporting form) to help increase eye exams and improve reporting of eye exam results.
- The HMO **published information about successful eye exam interventions** in the provider and member newsletters.
- The quarterly general member newsletter included **articles on diabetes and risk assessment information** aimed at identifying undiagnosed individuals.
- A **diabetes-specific newsletter** was sent to all members with diabetes. Topics included: "Type 1 and Type 2 Diabetes and Goal Setting"," When to Check Blood Glucose", "Setting Up a Log Book", "Choosing a glucose Testing Meter", "Glucose Control, A1c, and Setting Up a Meal Plan".
- The HMO continued to **offer free glucose-testing meters** .

- The HMO **expanded its benefit coverage** to include group diabetes education classes in addition to individual education sessions. Members also received a letter indicating that diabetes education was a **covered benefit** and encouragement to see an educator regularly. A list of available diabetes educators was included.
- The HMO promoted a **depression self-screening tool** for members with diabetes and encouraged them to contact their PCP or behavioral health office if further evaluation was needed.

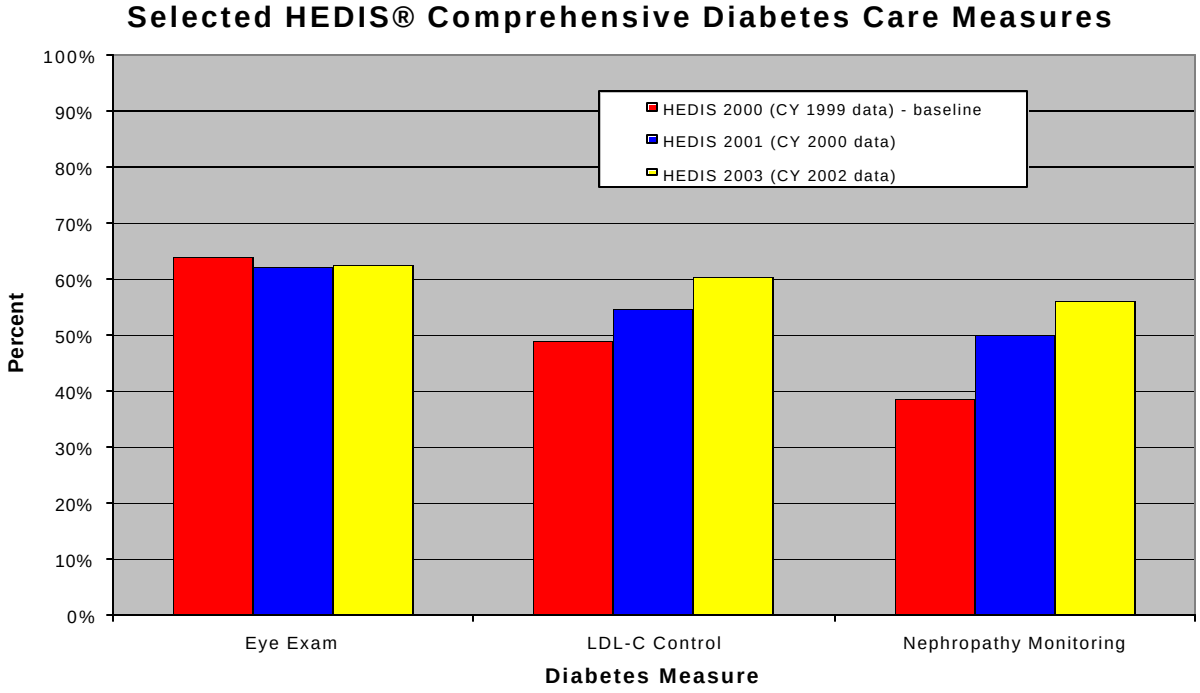
Since NCQA allowed rotation of the diabetes measures for HEDIS 2002, this HMO did not conduct a re-measurement process for calendar year 2001 data.

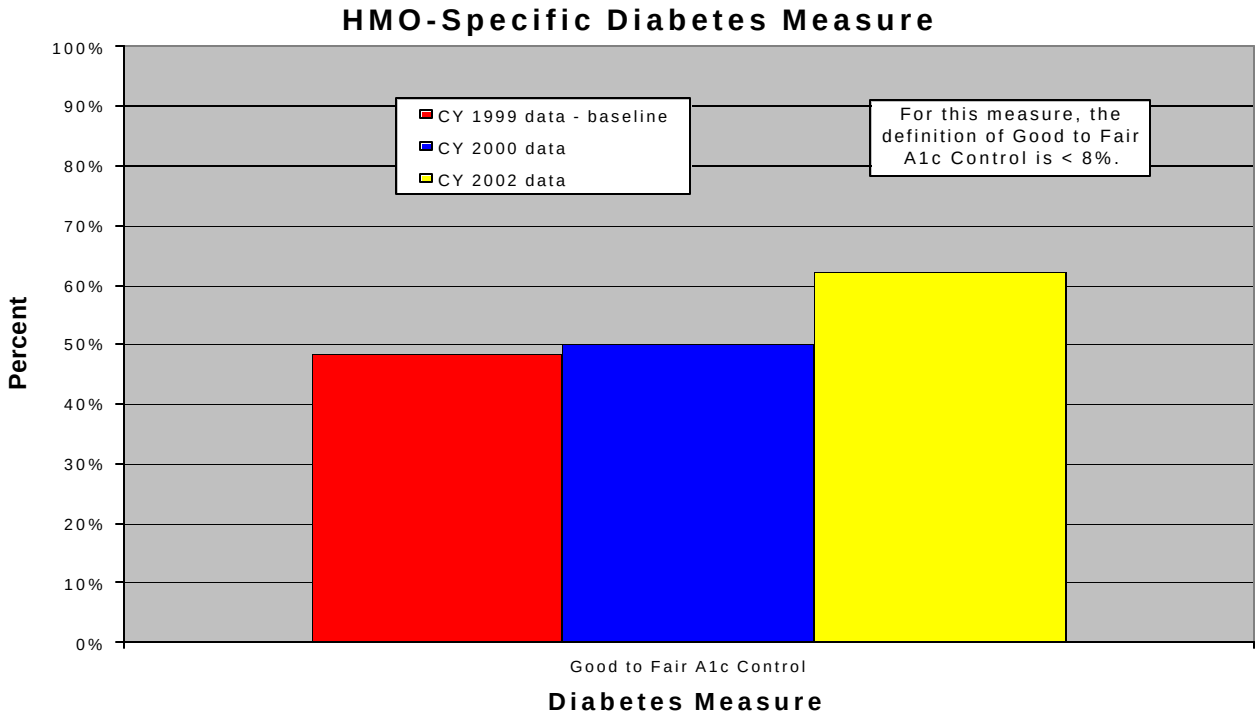
RE-MEASUREMENT #2 using HEDIS® 2003 methodology for the selected three Comprehensive Diabetes Care Measures revealed improvements in each of the measures from HEDIS® 2001. The HMO-specific (**non-HEDIS®)** measure, "good to fair A1c control (=8%)," also improved.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE AND HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C control <130 mg/dl	Nephropathy monitoring	Good to fair A1c control = 8%*
Baseline, HEDIS® 2000 (CY 1999 data)	64.0%	48.9%	38.7%	48.4%*
HEDIS® 2001 (CY 2000 data)	62.1%	54.7%	50.1%	50.1%*
HEDIS® 2003 (CY 2002 data)	62.5%	60.5%	56.2%	62%*

* HMO-specific (**non-HEDIS**®) measure





ONGOING CHALLENGES

The lessons and challenges that this HMO has encountered are mainly centered on what information they are collecting to help monitor members' health status. Working with different health care delivery systems, the HMO has had to work very hard to ensure consistency in its methodology. One of the biggest challenges has been working with claims data. Since this data are crucial for most interventions and performance evaluations, redesigns in the collection process have occurred to improve the accuracy and usefulness of the information. The impact of these changes in processes helps in the dissemination of interventions found to be effective and, just as important, promotes the elimination of inefficient and ineffective approaches to care.

LESSONS LEARNED
• The diabetes registry provides the foundation for ongoing quality improvement initiatives.
• The diabetes registry facilitates timely, patient-specific data for proactive patient management and enhances PCP accountability.
• A patient-PCP relationship enhances communication and accountability and is crucial to improve care.
• Simple tools can help ensure comprehensive and appropriate care.
• Feedback solicited from a wide array of health care providers on barriers and improvement plans helped the HMO tailor useful interventions.
• Patient surveys can be useful with identification of barriers to care and provide valuable insight for improvement activities.
• Close collaboration with providers and other health plans can enhance the impact of quality initiatives.
• Evaluation of the effectiveness of interventions is essential.

TOOLS INCLUDED WITH THIS SUMMARY

#1: Diabetes Eye Exam Survey
#2: Type 2 Diabetes Medication Chart
#3: Welcome To The Program Letter
#4: Diabetes Patient Report

(Member- MA)

TOOL #1

Diabetic retinopathy is the leading cause of new case of legal blindness among working-age Americans. Diabetics as a group have 25 times the usual risk of blindness. These statistics underscore the importance of regular dilated eye examinations for diabetic patients. Regular eye check-ups and treatment when necessary reduce the risk of blindness. XX Health Plan encourages all diabetic members to receive a dilated eye exam annually.

Please take a minute to complete the questionnaire below to help us evaluate the effectiveness of our educational program as well as to guide us on how to direct future educational pieces. If you have any questions, please contact XX 1-800-xxx-xxxx. Your response will be kept confidential; you do not need to provide your name.

Please circle one answer per question		
1.)	Have you ever been diagnosed with diabetes? If **no**, do not answer the remaining questions but please return the survey.	Yes No
2.)	Has your primary healthcare provider told you of the importance of yearly dilated eye exams?	Yes No
3.)	Have you had a dilated eye exam in the previous twelve-month period with an optometrist or ophthalmologist?	Yes No
4.)	If you have had a dilated eye exam in the previous twelve-month period was the exam performed by a provider affiliated with XX Health Plan?	Yes No
5.)	If you have not had a dilated eye exam in the past twelve months, did your eye doctor tell you the results of the exam?	Yes No
6.)	If you have not had a dilated eye exam in the past twelve months, will you make an appointment in the next month?	Yes No
7.)	If you have not had a dilated eye exam and do not plan on making an appointment for an exam please state the reason(s) why:	

Before leaving your eye examination, make sure the optometrist or ophthalmologist communicates the results with you and request with your primary healthcare provider.

HEALTH PLAN LOGO

Medications Update for Type 2 Diabetes – 2003

I. GLUCOSE LOWERING AGENTS

Drug Class Cost	Sulfonylureas $	Biguanides $$	Combination Products $$-$$$	Meglitinides $$$	Alpha-glucosidase Inhibitors $$$	TZD (Thiazolidinediones) $$$$$
Formulary Medications	**glipizide - All** **glyburide - All** **glimepiride – All** (Amaryl)	**metformin** - All **metformin XR - 3** (Glucophage XR)	**glyburide/metformin** (Glucovance) – **1, 2** **glipizide/metformin -NC** (Metaglip) **rosiglitazone/metformin** (Avandamet) - **1ST**	**repaglinide –2, 3** (Prandin) **nateglinide - 3** (Starlix)	**acarbose – All** (Precose) **miglitol – 2, 3** (Glyset)	**pioglitazone – 1*, 2, 3*** (Actos) **rosiglitazone – 1*, 2, 3*** (Avandia)
Actions	• Stimulates insulin secretion	• Targets hepatic and peripheral cells • Increases glucose utilization • Does not stimulate insulin secretion	• See components	• Augments glucose induced insulin output • More rapid onset of effect and shorter duration of action than sulfonylureas	• Slows absorption of carbohydrates • Reduces post-prandial blood sugar	• Regulates insulin responsive genes necessary for glucose and lipid metabolism. • Improves sensitivity to insulin in skeletal and adipose tissue.
Indications	• Type 2 DM as monotherapy or in combination with insulin, metformin or TZDs	• Type 2 DM alone or in combination with sulfonylurea or insulin • Overweight • Dyslipidemic • Children (Glucophage is approved for pediatric patients ≥10)	• Type 2 DM in patients who have failed initial treatment with individual components • Glucovance may be used in combination with TZDs	• Type 2 DM alone or in combination with metformin • Prandin may be used in combination with TZDs • Sulfa-allergic pts. • Hypoglycemia on low doses of sulfonylureas	• Type 2 DM alone or in combination with a sulfonylurea. • Precose may be used in combination with metformin or insulin • Post-prandial hyperglycemia	• Type 2 DM with failed conventional oral therapy • Actos and Avandia both indicated for concurrent use with metformin, sulfonylureas, insulin and as monotherapy
Contraindications	• Use with CAUTION in sulfa-allergic patients • Use caution with renal or hepatic insufficiency	• Do not use with renal or hepatic insufficiency • CHF • Excessive alcohol intake • Over age 80 • Acetazolamide	• See components	• Use caution with renal or hepatic insufficiency	• Chronic intestinal disease • Renal dysfunction (creatinine > 2.0) • Cirrhosis (acarbose)	• CHF III & IV; Abnormal LFT
Common Side Effects	Hypoglycemia and weight gain	Diarrhea, nausea, abdominal bloating, anorexia	See components	Hypoglycemia and weight gain	Flatulence, diarrhea, abdominal pain (less severe if titrated slowly)	Weight gain, fluid retention
Lab Monitoring	None	Baseline creatinine⊗ , LFTS	See components	None	Acarbose: LFTs every 3 months during 1st year, then annually. Miglitol: none	LFTs every 2mo x 1yr, then prn (ALT)
Usual Dose	Glip 5-20mg bid Glyb 1.25 -20 mgqd/bid Glim 1-4 mg qd	M:500 mg-1000 mg bid or 850 mg qd-bid M XR:500mg-1500mg qd	G: 2.5mg/500mg or 5mg/500mg bid M: Same as above A: Same as dose of each drug as monotherapy	R: 0.5mg-2mg w/each meal N: 60-120mg tid w/each meal	A: 25 mg - 100 mg tid M: 25mg - 100mg tid	Pioglitazone: 15-45 mg qd Rosiglitazone 4-8mg qd/bid
Maximum Daily Dose	Glip 40 mg qd Glyb 20 mg qd Glim 8 mg qd	M: 2550 mg qd MXR:2000 qd	G: 20mg/2000mg qd M: 20mg/2000mg qd A: 8/2000 mg qd	R: 4 mg qid N: 120mg tid	A: 100 mg tid M: 100 mg tid	Pioglitazone: 45 mg qd Rosiglitazone: 8 mg qd
AWP/30 day supply ***	Glip $ 11 - $20 Glyb $ 7 - $48 Glim $ 10 - $56	M: $33 - $65 MXR: $20 - $80	G: $50-100 M: $55-115 A: $95-180	R: $80 M: $90	Acarbose: $56- $67 Miglitol: $46 - $60	Pioglitazone: $88 - $150 Rosiglitazone: $75 - $130

⊗*For patients under the age of 70 serum creatinine should be ≤ 1.4 for women and ≤ 1.5 for men*

All= Covered by ***all*** HMOs in area **NC**=Not covered by any HMO **1**=HMO #1 **2**=HMO #2 **3**=HMO #3

Requires prior authorization** **ST Step Therapy** ** This is the average wholesale price**. *Actual prices for self-payers are higher. Due to contracting and other factors, the relative prices of products to different HMOs may differ considerably. Payment varies by payer and pharmacy.*

Revised 01/16/04

II. INSULINS[(]

Formulary Medications	Lispro (Humalog)((H))-All Aspart (Novolog)- 1	Regular (R)– All	NPH (N) – All Lente- All	Ultralente(UL)– 2, 3	Glargine (Lantus)– All	70/30 (N/R) All	70/30 Novolog Mix (aspart protamine/aspart)	75/25 - (Humalog N/H) 2, 3	50/50 -(N/R) 2, 3
Activity/Action • **Onset** • **Peak** • **Duration**	0-15” 30-60” 3-4 hours	30” 2 hours 4-6 hours	1-2 hours 4-6 hours 8-12 hours	4-6 hours 10-14hours (variable) 18-36 hours	3-4 hours Peakless 24-36 hours	30” Variable 12 hours	10-20” 1-4hours 15-18hours	0-15” Variable 12 hours	30” Variable 12 hours
Indications	Insulin is indicated in Type 2 diabetes that cannot be adequately or safely controlled with oral medications in combination with diet and exercise. Insulin is therapy of choice during pregnancy. Insulin can be used in conjunction with oral medications in DM2.								
Contraindications/ Cautions	Hypoglycemic unawareness can occur in setting of frequent hypoglycemia and rarely with use of B-blocker therapy. Glargine cannot be mixed with other insulins in the same syringe. UL may have an unpredictable peak and duration.								
Side Effects	Hypoglycemia • May occur quickly with Lispro or Aspart • Unpredictable in patients with gastroparesis • May occur more frequently in patients with renal insufficiency and concommitment use of alcohol. Weight gain								
Dosing Guidelines	Type 1: Average dose is 0.4-0.8 u/kg body weight per 24 hours. This can be divided in a variety of intensive insulin regimens. Type 2: Average dose is 1-1.5 u/kg per 24 hours. If adding N at HS to oral medications, divide weight (in kg) by 4 to get dose. Insulin therapy should be modified based on home glucose monitoring and A_1C levels.								
	Lispro (Humalog)((H)) Aspart (Novolog)	**Regular (R) (Humulin R/ Novolin R)**	**NPH (N) Lente (Humulin or /Novolin)**	**Ultralente (UL)**	**Glargine (Lantus)**	**70/30 (N/R) (Humulin/ Novolin)**	**70/30Novolog Mix**	**75/25 (Humalog N/H)**	**50/50 (N/R)**
AWP/1000Units*** • **Vial** • **Cartridge** • **Disposable Syringe**	**$61.00** **$82.00/$76.00** **$79.00**	**$27.00** **$48.00/$54.00** **$38.27-InnoLet**	**$27.00** **$48.00/$54.00–NPH Only** **$56.00–NPHOnly** **$38.00 InnoLet**	**$27.00**	**$51.00**	**$27.00** **$48.00/$54.00** **$56.00** **$38.00 InnoLet**	**$61.00** **$76.00** **$79.00**	**$47.00** **$62.00**	**$27.00**

[(] ***Formulary Brands: Humulin –All***
Novolin - 1

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Requires prior authorization
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III. ANTIHYPERTENSIVES

Drug Class Cost	ACE (Angiotensin Converting Enzyme) Inhibitors $$						ARB (Angiotensin Receptor Blockers) $$$$
Formulary Medications	**benazepril – All** (Lotensin)	**enalapril- All** (generic)	**captopril – All** (generic)	**lisinopril All** (generic)	**quinapril – 3** (Accupril)	**trandolapril – 1, 3** (Mavik)	**losartan (Cozaar) – All valsartan (Diovan) – 2, 3 olmesartan (Benicar) – 1, 2**
Indications	• First line agent in diabetes • Hypertension • Treatment of congestive heart failure • Microalbuminuria – (with or without hypertension) • Can be used 24 hours after myocardial infarction						• 2nd line treatment for HTN when ACEI have failed or are not tolerated • CHF – Diovan • LVH—Cozaar • Nephropathy – Cozaar
Contraindication	• History of angioedema related to previous treatment with an ACEI • Pregnancy or women of childbearing age not using contraception • Volume depleted patients						• Hypersensitivity to any component. • Volume depleted patients.
Common Side Effects	• Cough • Headaches, dizziness, fatigue, nausea, anxiety, insomnia, constipation • Angioedema						• Similar to placebo • Rare angioedema
Drug Interactions	• Antacids: decrease effect of ACEI • NSAIDs: decrease effect of ACEI • Phenothiazines: increase effect of ACEI • Allopurinol: increase likeliness of allergic reaction to Allopurinol • Digoxin: increase plasma levels of Digoxin • Lithium: increase serum lithium levels, may cause toxicity • Potassium and Potassium-sparing diuretics: increased potassium levels						• Fluconazole increases losartan serum levels
Lab Monitoring	• Periodic serum creatinine & electrolytes • Periodic WBC						Periodic serum creatinine
	benazepril (Lotensin)	**enalapril** (generic)	**captopril** (generics)	**lisinopril** (generics)	**quinapril** (Accupril)	**trandolapril** (Mavik)	**losartan –** (Cozaar) **valsartan –** (Diovan) **olmesartan** – (Benicar)
Usual Dose	20-40 mg qd-bid	10-40 mg daily (qd or bid)	25-150 mg bid-tid	20-40 mg qd	20-80mg qd	2-4 mg qd	C: 50-100mg daily (qd or bid) D: 80-160mg (qd) B: 20mg (qd or bid)
Maximum Daily Dose	80 mg qd	40 mg qd	150 mg tid	80 mg qd	80mg qd	8 mg qd	C: 100 mg qd D: 320mg qd B: 40mg
Dose Strengths	5, 10, 20, 40 mg	2.5, 5,10, 20mg	12.5, 25, 50, 100 mg	2.5, 5, 10, 20, 40 mg	5,10,20,40 mg	1,2,4 mg	C: 25,50, 100 mg tab D: 40, 80, 160, 320 mg tab B: 5, 20, 40mg tab
AWP/30 day Supply ***	$30 - 60	$27 –50	$3 - 20	$13 - 30	$29 – 56	$23	C: $38-515 B:$32 D: $40-45

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***Requires prior authorization**

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Reference practice guidelines for target goals.

Drug Class Cost	HMG CoA inhibitors (statins) $$-$$$	Cholesterol Absorption Inhibitor $$	Nicotinic Acid $-$$	Fibrates $$	Bile Acid Sequestrants $$
Medications	**lovastatin** (generic) – **All** **fluvastatin** (Lescol,XL) –**All** **simvastatin** (Zocor) - **All** **atorvastatin** (Lipitor) – **1*, 2*3***	**ezetimibe** (Zetia) – **1ST, 2, 3**	**crystalline niacin** (generic) – **All** **sustained release niacin** (Niaspan) – **All**	**gemfibrozil** (generic) – **All** **fenofibrate** (Lofibra) – **2** (Tricor) – **3***	**colestipol** (Colestid) – **All** **cholestyramine - All**
Physiologic outcomes□ **LDL** **HDL** **Triglycerides**	↓ 20-50% ↑ 5-15% ↓ 10-30%	↓ 17-18% alone ↓21% in addition to statin ↑2% ↓4-11%	↓ 10-25% ↑ 15-35% ↓ 20-50%	↓10-15% (may ↑ in pts with trig) ↑ 10-15% ↓ 20-50%	↓ 15-30% ↑ 3-5% None or ↑
Indications	Lower LDL-cholesterol in patients with CHD, multiple risk factors, or very high LDL	Effective in combination with a statin for patients who can not reach goal on statin alone or who have contraindication to a statin.	Effective for moderate ↑ LDL, high TG and low HDL	TG > 400 mg/dL	Effective for moderate LDL elevation with normal TG
Contraindications **Absolute** **Relative**	Active or chronic liver disease Concomitant use fibric acid derivatives Pregnancy	Same as statin when used in combination Same as statin when used in combination	Chronic liver disease, pregnancy Peptic ulcer disease Type 2 diabetes, severe gout, hyperuricemia Active gallbladder disease	Pregnancy Liver or severe renal disease, cholelithiasis	Familial dysbetalipoproteinemia TG >500 mg/dl TG > 200 mg/dl
Common Side Effects	Well tolerated by most, mild GI complaints, rare hepatotoxicity	Well tolerated by most	Flushing, upper GI complaints, gout, hyperglycemia, hepatotoxicity	Well tolerated by most, mild GI complaints, rare hepatotoxicity	Upper and lower GI complaints, ↓ absorption of other drugs
Liver enzyme monitoring	0,3,6 months then q6 month	Same as statin when used in combination	0,3,6 months then q6 month	0,3,6 months then annually	None
CPK monitoring	Complaints of muscle aches/pains/cramps	Same as statin when used in combination	Complaints of muscle aches/pains/cramps	Complaints of muscle aches/pains/cramps	None
Starting Dose	lovastatin 20mg qd Lescol 40 mg qd Zocor 20-40 mg qd Lipitor 10-20 mg qd	10mg qd	Crystalline 1.5-3 g Sustained-release 1-2 g	gemfibrozil - 600 mg bid Lofibra – 67-200mg qd Tricor – 54-160mg qd	Cholestyramine 4-16 g Colestipol 5-20 g
Maximum Daily Dose	lovastatin 80mg qd Lescol 80 mg qd Zocor 80 mg qd Lipitor 80mg qd	10mg qd	Crystalline 6 g Sustained-release 2 g	gemfibrozil – 600mg bid Lofibra – 200mg qd Tricor – 160mg qd	Cholestyramine 24 g Colestipol 30 g
AWP/30 day supply***	lovastatin $36-62 Lescol $44 Zocor $65- 109 Lipitor $57- 87	$57	Crystalline $ 5 Sustained-release $46- 92	gemfibrozil - $16 Lofibra –$25-65 Tricor - $28-75	Cholestyramine$23-91 Colestid $35-131
Equipotent Dosing For HMG CoA Inhibitors	**Lescol 40 = lovastatin 20 =Zocor 10** **lovastatin 40 = Zocor 20 = Lipitor 10**				

□*Reference practice guidelines for target goals.*

All= Covered by ***all*** HMOs in area **NC**=Not covered by any HMO **1**=HMO #1 **2**=HMO #2 **3**=HMO #3
***Requires Prior Authorization**
ST Step Therapy
***** This is the average wholesale price.** *Actual prices for self-payers are higher. Due to contracting and other factors, the relative price of products to different HMOs may differ considerably. Payment varies by payer and pharmacy.*

TOOL #3

June 2000

Dear Member,

We have written to you in the past providing you with information about diabetes and your care because we believe that you have the right and the opportunity to achieve your optimum level of health and well-being. We would like to continue to provide you with tools to help you through the Diabetes Health Program.

The benefits of this program include:

- Reminders regarding practices in the prevention of complications like annual dilated eye exams
- A quarterly diabetes-focused newsletter
- Lists of community resources and reference materials

Enclosed you will find an outline of the care you should expect for the optimal management of you diabetes and the prevention of complications. Furthermore, to ensure the best care from your practitioner, we will provide a similar guideline, Essential Diabetes Mellitus Care Guidelines, to your practitioner. We will also send your practitioner a report of the services you have received that were recommended by this guideline. This report will help your practitioner and you determine care you may be missing.

Never hesitate to discuss with your practitioner the care of your diabetes.

If you have further questions about the Diabetes Health Program, please call me at 1-800-xxx-xxxx, ext., xxx.

TOOL #4

Report Date:

Diabetes Patient Report
For claims with Date of Service between January 1, 2002 and December 31, 2002

Patient Name
Phone
Gender
Age
Member Since
ID Number

Practitioner Name
Clinic Name
Address

Service:	Office Visit(s) For Diabetes or Preventive Care	Hemoglobin A1c or Glycosolated Hemoglobin	LDL	Eye Exam	Kidney Function Microalbuminuria	Monitoring Creatinine Clearance	Flu Shot	Emergency Department Visit(s) For Diabetes	Hospitalization(s) For Diabetes
Goal:	2-4 in 12 Months	2-4 in 12 Months	1 in 12 Months	1 in 12 Months	1 in 12 Months (If no renal disease)	1 in 12 Months(If renal disease)	1 in 12 Months	None or Mimimal	None or Mimimal

Prescriptions (including glucose test strips) over the last twelve months

	Last Date Filled during report period	**# of Fills**	# tabs, caps etc.# inhalers# milliliters

Kidney Function Monitoring (per Essential Diabetes Mellitus Care Guidelines)

1. Microalbuminuria is an important predictor of diabetic nephropathy and cardiovascular mortality.
2. Adults with diabetes should be screened for microalbuminuria annually.
3. If microalbuminuria > 30 micrograms / mg creatinine or > 30mg / 24 hrs. initiate ACE inhibitor (unless contraindicated).
4. After microalbuminuria is > 300 mg / 24 hrs. then do creatinine clearance and protein annually.

If you believe you are not serving as this patient's primary care provider, please contact XX Health Services Department at 1-800-

CASE STUDY #8

HMO BACKGROUND

- Staff at this HMO recognized that diabetes accounts for a significant amount of morbidity and identified the need to assess its impact within its own member population.
- The plan used WI Health Status Survey statistics indicating that 27.9% of people with diabetes in the state had been hospitalized in the past twelve months compared to 10.7% for people without diabetes.
- HMO claims for diabetes ranked in the top five for inpatient diagnoses for females ages 40-63 years and for ambulatory diagnoses for males ages 40-64 years.
- The HMO expanded its previous two years' commitment to improving diabetes care (e.g., activities to improve diabetic retinal exams and A1c) by implementing a Diabetes Disease Management Program (DDMP) in 1997. This decision was based on several factors:
  - The DDMP could impact a significant number of members.
  - Management of the disease could proactively prevent complications and improve quality of life.
  - Standards of disease management existed.
  - Work towards the disease management process was underway within current HMO initiatives.
  - System leaders and initiatives would support the programs.
- The HMO began using automated lab data and electronic registry data in 1998.
- The scope of measurement assessment expanded with the growth of the DDMP and the addition of the HEDIS® Comprehensive Diabetes Care Measures in 1999.
- The HMO conducted an audit in 1999 to validate the accuracy of clinic-entry of A1c test dates and results; the audit confirmed that the registry could serve as an accurate source for this data.

METHODOLOGY

The HMO used **HEDIS â 1999 methodology** to assess 4 Comprehensive Diabetes Care Measures: eye exam performed, LDL-C screening performed, LDL-C control, and nephropathy monitoring. In addition, **3 other HMO-specific** (**non-HEDIS®**) measures were assessed: at least 2 A1c tests during the reporting year, **A1c level =8%,** and at least 2 office visits to their PCP or specialist during the reporting year.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE & HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C screening performed	LDL-C control (<130 mg/dl)	Nephropathy monitoring	At least two A1c tests *	A1c =8% *	At least two office visits *
Baseline, HEDIS® 1999 (CY 1998 data)	80%	71%	42%	36%	75%*	56%*	87%*

* HMO-specific (**non-HEDIS®**) measures

BASELINE BARRIER ANALYSIS

The Quality Coordinator initially reviewed data results to help identify failures and barriers. This information was then sent to the Disease Management Committee and the Clinical Quality Committee who conducted an internal barrier analysis to identify opportunities for improvement. These committees were comprehensive and included representatives from the health plan, clinics, and practicing providers (e.g., medical directors, senior leadership, quality staff, administration, family practice physicians, endocrinologists, diabetes educators, medical assistants, nurses, pharmacy, etc.). The committees identified the following barriers:

- Physician offices lacked sufficient tracking systems to identify whether their patients had received key services to enable them to proactively manage and coordinate care.

- The HMO lacked an electronic database that was accessible at multiple points within the system to facilitate tracking of claims, lab data, clinic data, and input on diabetes management from other clinicians (e.g., diabetes educators, dietitians, etc.).
- There was a lack of physician feedback on conformance to diabetes practice guidelines.
- Physicians lacked knowledge of current best practices for managing diabetes care.
- Members lacked knowledge of current information to help manage their diabetes.
- The system lacked a case management component to focus on members who were at high risk or had difficulty managing their diabetes.

BASELINE INITIAL INTERVENTIONS

Subsequent interventions were broad-based and comprehensive, **targeting the health system infrastructure, providers, and members**. Major efforts were made to **develop the diabetes registry and ensure its accuracy** for use for proactive care and quality improvement. **Clinics and providers were involved in the development of the interventions** and given ongoing support during all phases of implementation.

The HMO continued to implement its **clinic-based DDMP approach** that included:

- **Elimination of the referral requirement** for diabetic eye exams;
- An **electronic database** that was accessible at multiple points in the system;
- **Updated laboratory data in the database;**
- **Tracking systems in PCP offices** to coordinate care and provide information on whether members received key diabetes services;
- **Dedicated staff in physician offices** to manage care needs of members with diabetes;
- Clinical quality consultants to **assist with initial and ongoing implementation** training of clinic staff (e.g., set up the systems to monitor diabetes management, use of the registry and its reports, program components, tools, etc.);
- Clinical quality consultants to **review physician/clinic use of the clinical and disease management guidelines and processes** based on rates, use of worksheets, and cooperation with implementation processes on a quarterly basis; (referrals were made to the medical director as needed to **address issues with conformity** to the guidelines);
- **Physician feedback on conformance** to the *Guidelines* through a report card system (e.g., listing **current practice rates, regional rates, office specific rates, and the HMO's overall rates**);
  - Reports were **initially blinded**, however, since blinding didn't allow physicians to learn from providers achieving higher rates, the HMO changed to a "**data sharing system" with un-blinded data for all performance measures** in 1999. The goal was to **encourage physicians to network with each other and share practice patterns and ideas for improving processes**. The content of the reports has expanded to be more comprehensive over time.
- **Provider newsletters** with articles on professional education about diabetes and the DDMP, HEDIS® performance measures, the importance of good control, physical activity, etc.
- **Member newsletters** with articles about diabetes control and management, physical activity, etc. [**tool #1].**
- Educational materials for **newly identified members** with diabetes (e.g., letters regarding the disease management program, a diabetes education handbook, personal data tracking wallet card, etc.).
- **Reminders** to members lacking exams [**tool #2**];
- A **case management component** for members at high risk or with special needs and a **system to stratify risk**:
  - **Level 1- highest risk**: on oral hypoglycemic or insulin with **one or more** of the following: no office visit in 12 months, blind, **OR** most recent HbA1c >9.5.
  - **Level 2- medium risk**: has hypertension OR is diabetic medication **and** not already on Level 1.
  - **Level 3 - lowest risk**: on no medication AND not already Level 1 or 2.

Data Validity Audit:
The HMO conducted an **audit to determine the validity of eye exam information in the diabetes registry** for use as an accurate data source to measure retinal exams. The audit **identified several problems with the clinic-entered data**:

- Clinic staff entered dates and results based on patient self-report, some of which were inaccurate; exams may not have included the retinal exam component.
- Reports from the eye care professionals were often incomplete or missing, however, the date of the exam was still being entered into the database.
- The clinic often entered the date the report was typed or the date the report was received by the PCP into the registry instead of the date of the actual exam.
- Results received by phone or in writing at the clinic were transcribed into the patient's medical record by someone other than the PCP.
- Reports sent to the PCP were not always kept as part of the medical record; therefore there was a lack of documentation to support the date entered into the registry.

As a result of the audit, the Health Management Team (HMT) and the Quality Staff (QS) **revised the process for eye exam data entry into the registry**.

- Any eye exam data being entered into the registry manually rather than via claims had to be concurrently reviewed for accuracy and completeness by a member of the HMT or QS before it appeared on the worksheets. This resulted in more accurate monthly reports for the clinics, allowing them to accurately contact members who needed exams.
- QS educated eye care providers on proper coding of eye exams for billing and provided sample forms for reporting exam results to the PCPs.
- The HMO sent the sample reporting form to members along with an eye exam reminder letter. Correspondence included instructions to take the reporting form to their eye care provider for completion and to ask the eye care provider to forward the report to the PCP.

RE-MEASUREMENT #1 using HEDIS® 2000 methodology revealed improvements in the four selected HEDIS® Comprehensive Diabetes Care Measures: LDL-C screening, LDL-C control, eye exams, and monitoring for nephropathy. Improvements were also noted with two of the HMO-specific (**non-HEDIS®**) measures: A1C testing (at least two) and **A1c control =8%**. Although office visits declined slightly, the DDMP discussed this with several clinics that **thought this was reflective of more care being done over the telephone** (e.g., calls to the member to assess status, labs, and treatment decisions and to encourage follow-up) **rather than through office visits.**

Further analysis noted that the **average A1c level had decreased from 8.6% prior to implementation of the DDMP to 7.6%** by the end of 1999. The HMO also **began to note changes in total health care costs for the population with diabetes**. Although the HMO's per member per month costs continued to increase, the **costs for the population with diabetes decreased since the implementation of the DDMP**.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE & HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C screening performed	LDL-C control (<130 mg/dl)	Nephropathy monitoring	At least two A1c tests *	A1c =8% *	At least two office visits *
Baseline, HEDIS® 1999 (CY 1998 data)	80%	71%	42%	36%	75%*	56%*	87%*
HEDIS® 2000 (CY 1999 data)	83%	77%	57%	57%	77%*	61%*	85%*

*HMO-specific (**non-HEDIS®**) measures

RE-MEASUREMENT #1 BARRIER ANALYSIS

- There was a continued need for member and provider education regarding diabetes treatment, including goals.
- A literature search revealed that patient adherence with medication decreases over time; patients don't fully understand the benefits of taking their medications as prescribed or the risks of not taking them as prescribed. Studies also indicated that some medications were overused when better treatment alternatives were available. There was a **need for a simple, effective method to communicate consistent messages about proper medication** use to patients from all health care providers.
- No additional barriers were identified.

INTERVENTIONS SUBSEQUENT TO RE-MEASUREMENT #1

- The HMO **continued to expand its previous interventions**.
- The HMO **contacted health plans that set national benchmarks** for the HEDIS® measures to find out what actions they had taken to achieve their high performance levels.
- The HMO Pharmacy Department worked with the Quality Department to develop tear-off sheets, referred to as "ETC" (**Everyone Teaching Compliance**), for patients for a variety of topics. The tear-off sheets can be reviewed with patients to efficiently educate them on their disease process and proper management.
  - **Research reviewed** by the group indicated that patients are more likely to comply with and remember instructions: if they hear the information from someone they trust; if they hear the same message repeatedly; if the information is simple (e.g., to easily understand and remember); and if they receive visual reinforcement material along with the verbal explanation.
  - Topics selected for development were based on **feedback from pharmacists and physicians** in areas where there were opportunities for better treatment, improved compliance, and/or had champions or experts who were willing to participate in the development of the tools and educational activities.
  - Two continuing education presentations on the education tear-off sheets were offered to providers. Pharmacy staff also presented the tools to providers at the clinics throughout the year.
  - Tear-off pads were provided free of change by the HMO [**tool # 3**]
- QS focused **efforts to decrease variation in regions** with lower rates by working with physician offices to **set up systems to monitor diabetes management** and to implement the DDMP, registry and reports.
- Physicians received **quarterly, un-blinded data** about their rates, clinic rates, regional rates, and plan rates for the diabetes measures. Clinics received monthly worksheets that addressed all seven areas of diabetes management.
- The HMO **initiated a reimbursement plan using clinical performance data**, providing an **incentive** for physician offices to work on improvement and use of tools available through the plan. Reimbursement work teams met regularly to monitor rates and **help groups who were not meeting goals**. Physician management bonus fees were attached to the quality measure for A1c controlled to a level of =8% and for diabetes eye exam rates. The physicians were divided into care groups, which could be single doctors, a clinic, or a group of clinics. Physicians were given rates individually and as a care group. Payment was based on whether or not the care group met the established goals for the measures.

RE-MEASUREMENT #2 using HEDIS® 2001 methodology revealed improvements in all seven measures.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE & HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C screening performed	LDL-C control (<130 mg/dl)	Nephropathy monitoring	At least two A1c tests *	A1c =8% *	At least two office visits *
Baseline, HEDIS® 1999 (CY 1998 data)	80%	71%	42%	36%	75%*	56%*	87%*
HEDIS® 2000 (CY 1999 data)	83%	77%	57%	57%	77%*	61%*	85%*
HEDIS® 2001 (CY 2000 data)	85%	89%	67%	66%	82%*	67%*	88%*

* HMO-specific (**non-HEDIS**®) measures

RE-MEASUREMENT #2 BARRIER ANALYSIS

- The analysis showed that the main reason for failure for measures that required testing was simply a lack of testing.
- Concerns with measures requiring control showed that levels were either too high or that the tests were not completed.
- **An analysis of clinics and regions that were more successful revealed that physicians at these sites were active in the development of the DDMP**. Two successful regions were primarily served by the same provider network and had selected diabetes as one of their quality initiatives for several years. **These clinics appointed specific people to be responsible for internal tracking, data collection, patient contacts, etc. for their disease management populations.**

INTERVENTIONS SUBSEQUENT TO RE-MEASUREMENT #2

- The HMO continued its previous interventions and continued to expand activities.
- The ETC program that was developed in 2000 was well received, so the program expanded to additional topics in 2001.
- In 2001 the HMO **updated its version of the diabetes registry into a data warehouse**. The new registry featured **daily downloads** of demographic, clinical, laboratory, and claims data from various sources (e.g., electronic medical records, health plan software, and manual entry), **providing daily updates, rather than the previous monthly updates**. **All of the tickler and reminder systems were enhanced**. The system includes a "drill down report," used to identify trends for failures, and a "summary goals report." The "**summary goals report**" is a more real time tool that allows for individual identification of members at the clinic level that need services. This "summary goals report" is **provided to physicians through the registry and lists their panel of patients with diabetes and pertinent information,** including:
  - The patient's phone number, birth-date, smoking status, 2 most recent A1c's and their values, 2 most recent office visits with PCP or endocrinology, the most recent diabetes eye exam, the 2 most recent lipid panels and values, the most recent nephropathy screening, and whether the patient has the co-morbidities of coronary artery disease and hypertension along with diabetes.
- QS continued to provide **support for the data warehouse for clinics without the on-site electronic registry** by sending them monthly paper reports.
- The HMO QS **expanded its audit of the clinic-entered electronic registry data** to assess validity for use as ongoing data sources. All reviewed data passed the audit.
- **Interventions to address barriers in regions with lower rates** included:
  - **Designation of clinic staff to oversee implementation of DDMP strategies**;
  - **Monthly meetings** of a disease management team (e.g., system diabetes center representative, clinic administration staff, HMO DDMP representative, and clinic staff) to discuss **implementation issues, share ideas, successes and challenges, problem- solve,** etc.;

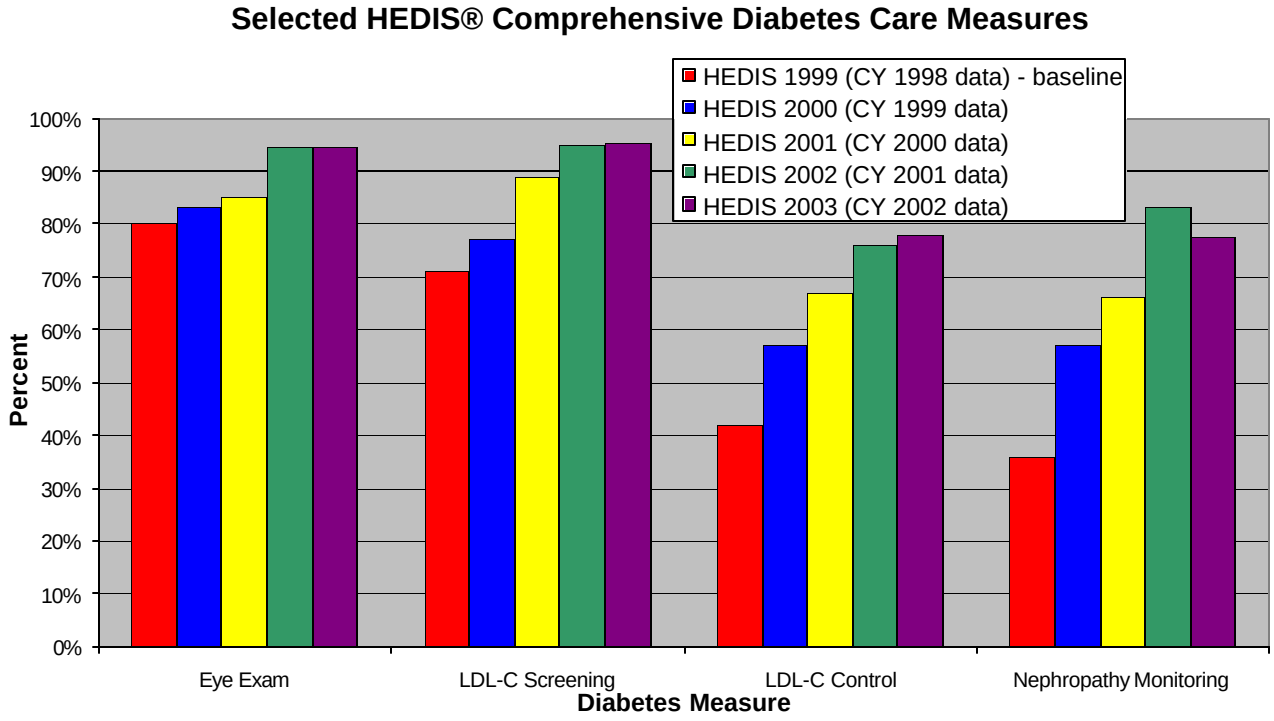
- Implementation of the **electronic registry** at the largest volume clinics;
- **Clinic administrator authorization** to allow disease management staff to arrange home care visits or transportation as needed for members to help them receive proper care.

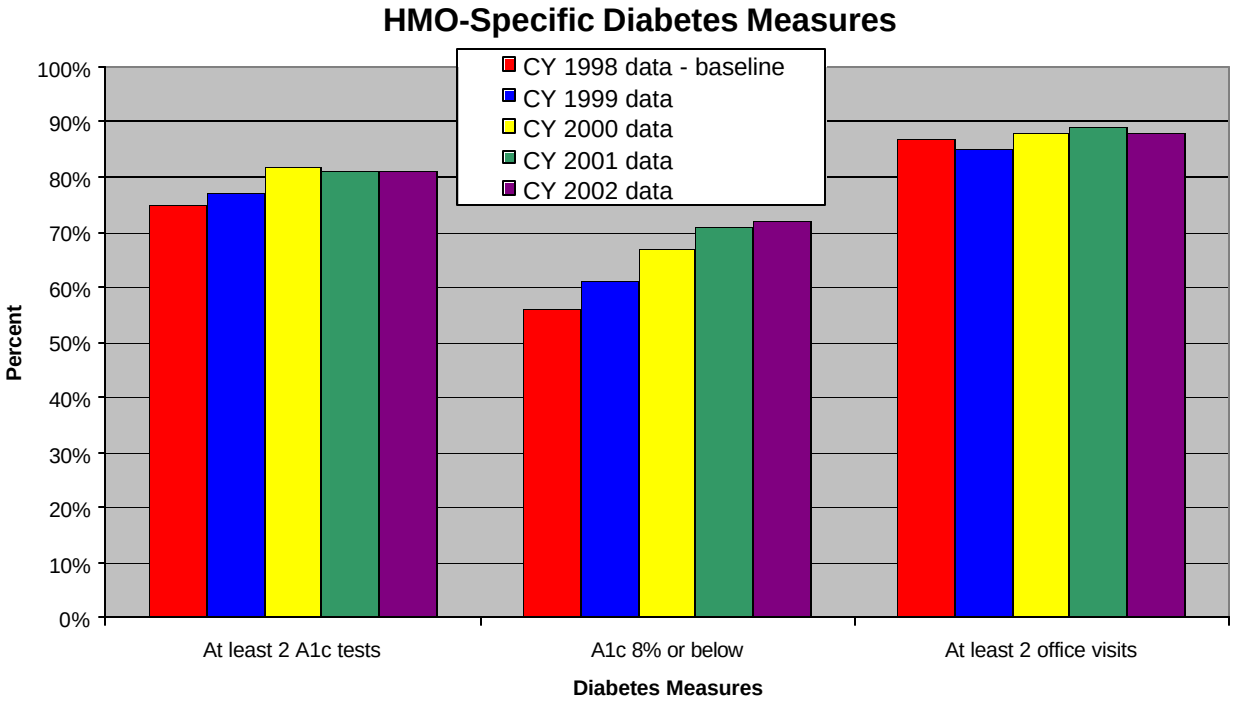
SUBSEQUENT RE-MEASUREMENTS #3 AND #4 revealed continued improvement trends.

SELECTED HEDIS® COMPREHENSIVE DIABETES CARE & HMO-SPECIFIC MEASURES

	Diabetes eye exam performed	LDL-C screening performed	LDL-C control (<130 mg/dl)	Nephropathy monitoring	At least two A1c tests *	A1c =8% *	At least two office visits *
Baseline, HEDIS® 1999 (CY 1998 data)	80%	71%	42%	36%	75%*	56%*	87%*
HEDIS® 2000 (CY 1999 data)	83%	77%	57%	57%	77%*	61%*	85%*
HEDIS® 2001 (CY 2000 data)	85%	89%	67%	66%	82%*	67%*	88%*
HEDIS® 2002 (CY 2001 data)	94.7%	95%	75.9%	83%	81%*	71%*	89%*
HEDIS® 2003 (CY 2002 data)	94.6%	95.4%	77.9%	77.5%	81%*	72%*	88%*

* HMO-specific (**non-HEDIS**®) measures





INTERVENTIONS SUBSEQUENT TO RE-MEASUREMENTS #3 AND #4

- The HMO continues to **enhance its capacity to track and monitor care** through its Diabetes Disease Management Program, diabetes registry, and data warehouse.
- QS continue to send **monthly and quarterly reports to physicians and clinics** to facilitate improved patient care. QS staff also **identify clinics with lower rates** through data reports **and work directly with them** to make improvements and decrease regional variation.
- The HMO continues to **annually audit its electronic disease management registry** to assess the accuracy of the clinic-entered data to determine its utility as a valid data source.
- The HMO QS continue to **work closely with physicians and individual clinics** to **identify needs, resources, improvement opportunities and strategies**. The HMO **seeks feedback directly from the physicians and clin**ics to help improve the diabetes program and to provide support.
- **Member education has expanded** to include partnerships with employer groups to help employees better understand the diabetes disease process and proper care. The HMO also initiated an on-line educational tool that includes 6 interactive diabetes modules.
- The HMO pharmacy and QS continue to use and promote the ETC, Everyone Teaching Compliance, patient education program.

ONGOING CHALLENGES

This HMO is challenged to identify and intervene with members who have co-morbidities and who are at risk for developing kidney failure and other complications. They will be working towards ways to determine how to make the next leap towards improving the health of members with multiple health issues.

LESSONS LEARNED
• The availability of a clinic-based disease management approach and an accurate electronic registry were essential to improve proactive patient monitoring by the PCP.
• Annual auditing of the clinic-entered diabetes disease management registry data helped ensure that the data were accurate and a valid source for measuring outcomes.
• Un-blinded feedback on performance to physicians, clinics, and regions encouraged collaboration to share improvement strategies.
• Involving physicians in the development of the Diabetes Disease Management Program was crucial to successful implementation.
• Close affiliation with physicians and clinic staff was important during all phases of implementation of the *Guidelines*, registry, Diabetes Disease Management Program, and quality improvement activities.
• Designating resources and specific staff persons who are primarily responsible for diabetic disease management within the individual clinics was beneficial to stay focused to achieve improvements.
• The HMO identified successful strategies to use to help spread implementation of the clinic-based disease management approach to more clinics and regions.
• Quality staff's telephone contact with members decreased over time as clinics and case managers assumed the responsibility for the calls and became more proactive in managing members' needs.
• The HMO's reimbursement plan resulted in closer monitoring of diabetes members.
• Ongoing targeted case management for members at high risk and for those with special needs was essential.

TOOLS INCLUDED WITH THIS SUMMARY:

#1: Sample Member Education Article
#2: Sample Member Reminder Letter (MD office can print from the registry)
#3: Diabetes "Everyone Teaching Compliance" Sample Sheet

TOOL #1

You Have Diabetes--But You Don't Have to Get Heart Disease Too

What does diabetes have to do with heart disease?

People with diabetes are more likely to get heart disease because diabetes can have a bad effect on your blood vessels. Some of your lifestyle habits may also raise this risk. Here are some things you can do about your lifestyle habits:

1. Keep your blood sugar level under control.

Keeping your blood sugar level under control will cut your risk of heart disease. Most people with diabetes should check their blood sugar level every day. By exercising often, eating a healthy diet, and taking any prescribed medicines to control your blood sugar level, most people can keep their blood sugar level nearly normal.

2. Lose weight--and keep it off.

Diabetes and overweight often go together. Losing weight helps a lot of health problems, like high blood pressure and controlling your blood sugar levels. Weight loss is important if you have a lot of extra weight around your waist and tummy. "Spare-tire" fat is more risky for heart disease than extra weight around the hips or thighs. You don't have to lose a huge amount to help. Losing even 10 pounds will cut your risk of heart disease. Just don't regain the weight that you lose.

3. Lower your cholesterol level.

You've probably heard about "good" and "bad" cholesterol. Bad cholesterol (LDL cholesterol) can clog your arteries and lead to heart disease. Good cholesterol (HDL cholesterol) carries unneeded cholesterol away from body tissues, so it lowers your risk of heart disease. If your doctor says your cholesterol level is too high, your diet should limit the amount of fatty and cholesterol-rich foods you eat. If diet alone doesn't lower your cholesterol level, medicines can help do that.

4. Increase your physical activity.

Exercise is very important for people with diabetes. Diet and exercise work together--your diet will work faster and better if you get regular exercise. You and your doctor can plan exercises that will work for you and be safe. Exercise will also help lower your blood sugar level and cut your risk of heart disease.

5. Control your blood pressure.

People with diabetes often have high blood pressure too. High blood pressure is a big risk factor for stroke. It also increases your risk for heart disease and kidney disease. If your doctor says your blood pressure is too high, weight loss and exercise are important. It is also important not to drink very much alcohol. If you can't lower your blood pressure with diet and exercise, your doctor might have you take medicines that will help.

6. If you smoke, stop smoking.

Smoking is bad for anyone but even worse for people with diabetes. Smoking has a bad effect on your blood vessels. If you have diabetes and you also smoke, you double your risk of getting heart disease. Worse still, if you keep smoking while you try to reduce other risks (like losing extra weight), the diet won't do you much good.

Remember:

Diabetes and heart disease are related. Diabetes, being overweight and having high blood pressure are related. You can do a lot to help by your own efforts. Diet and exercise are good ways to control your blood sugar level, lower your blood pressure and cut your risk of getting heart disease. When diet and exercise don't help enough, medicines can help control blood sugar levels, lower cholesterol levels and control blood pressure, if taken as prescribed.

Where can I get more information?

The American Diabetes Association can help you choose the right foods, plan healthy meals and get good nutrition while keeping your calories down.

American Diabetes Association
1701 North Beauregard Street
Alexandria, VA 22311
Telephone: 1-800-342-2383
Web address: http://www.diabetes.org

The American Heart Association is a good source for diets that are low in fat and cholesterol.

American Heart Association
7272 Greenville Avenue
Dallas, TX 75231
Telephone: 1-800-242-8721
Web address: http://www.americanheart.org

TOOL #2

Date

Patients Name
Address
City, State, Zip

Hello,

Very important parts of your diabetic care are preventing long-term complications by controlling blood sugars and having regular health exams.

Our records indicate that you are due for the following:

- ❑ Diabetic Follow-up Visit with your Physician or _____
- ❑ Hemoglobin A1c Test
- ❑ Eye Exam
- ❑ Lipid Panel-Fasting (nothing to eat or drink 12 hours before test)
- ❑ Urine Test for Microalbumin
- ❑ Other Testing _____

Please contact my office or your eye care specialist to schedule the above visit.

If you recently received these services, please disregard this letter. If this care has been performed elsewhere, please send me a copy of the results so that I may update your medical record. If you have any questions or need assistance, please don't hesitate to call _____

Thank you,

Physician's name

TOOL #3

Diabetes

When you have diabetes, your body can't properly use the energy from the food you eat. When food is digested, the sugar in the food enters the bloodstream, and from there, enters the cells of your body to make energy. Insulin allows the sugar to pass from the blood to the cells. In people who have diabetes, this system doesn't work effectively. Sugar builds up in the bloodstream instead of going into the cells of the body. Therefore, enough energy is not produced to properly fuel the body.

Controlling Your Diabetes Can Reduce Your Chance of:

- **Heart disease and stroke**;
- **Eye problems** that can lead to blindness;
- **Kidney disease**;
- **Nerve damage**;
- **Sores on the skin** which can lead to infections, and possibly to foot or leg amputation;
- **Sexual problems**.

Know your diabetes goals!!!

Blood Pressure	**<130/80**
Cholesterol*	**LDL <100 mg/dl**
HbA1c	**<7.0%**
Smoking	**STOP!**

*Triglycerides <150 mg/dl;
HDL >45mg/dl for men, >55mg/dl for women

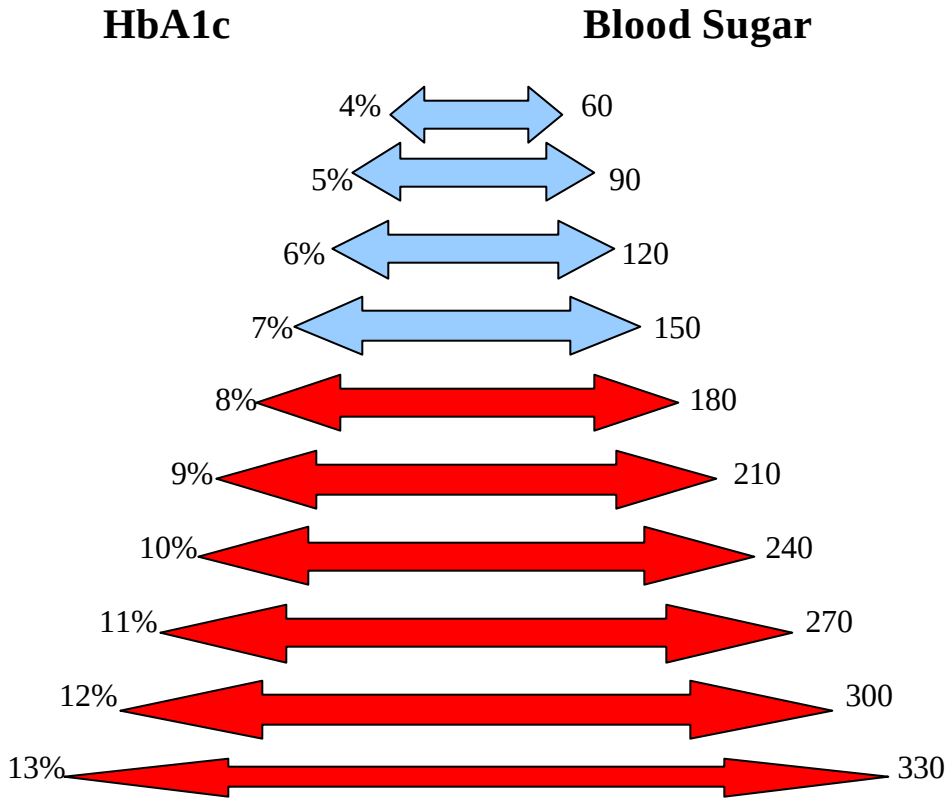
Additional Diabetes Management Activities

- Inspect your feet, with shoes and socks off, daily.
- See your doctor every 3-6 months.
- See your dentist every 6 months.
- See an ophthalmologist/optometrist for a dilated eye exam, annually.
- Get your urine tested for microalbumin (protein) to check kidney functioning, annually.
- Get an influenza vaccine, annually.

Blood Sugar

Research has found a direct link between high blood sugar levels and the complications of diabetes. Reducing your blood sugar levels to normal or near-normal can help reduce your risk of complications.

The Hemoglobin A1c Test (HbA1c) measures the average amount of sugar in your blood over the last 3 months or so. Use the following chart to compare your daily blood sugar readings to the HbA1c test.



CARDIOVASCULAR DISEASE

People with diabetes are two to four times more likely to develop heart disease, which can lead to heart attack stroke than the general population. Therefore, it is particularly important to control your risks for heart disease. This includes:

- Controlling your cholesterol levels **(LDL <100 mg/dl)**.
- Controlling your high blood pressure **(<130/80 mm Hg)**.
- Eating a healthy diet. Controlling your weight **(BMI <25)**.
- Having annual tests for kidney function **(<30ug/mg creatinine)**.
- Getting proper exercise **(30 minutes aerobic exercise at least 3 times per week**).
- If you smoke, **STOP!**
- Taking any prescribed **medications as directed**.